

distinguished specialists, but how can he be expected to keep step with the rapid advance in every department? It is our opinion that more antiquated anatomy and physiology, to say nothing of taxonomy (which of course includes the facts of morphology), are being taught in this country by well known botanists than we would care to acknowledge. Anatomists (still called histologists in some quarters) are apt to give little or no conception of modern physiology, and none whatever of our fluctuating taxonomy. Taxonomists (both in specific and genetic lines) are likely to be fair anatomists, but simply retailers of an obsolete physiology. As for physiologists, we may be said, as yet, to have none. We have some fair "readers" of the subject, and others who are mechanically expert enough to devise pieces of apparatus, but as a distinct department in this country, physiology is yet to be established.

A SCHOOL OF BOTANY would prevent this lop-sided presentation of the subject, and would develop a race of botanists with broader views. Such a center of investigation and instruction will doubtless soon be established, as educational matters are moving just now with remarkable rapidity.

CURRENT LITERATURE.

Handbook of British Fungi.

Few systematic works, especially of those relating to cryptogams, have enjoyed such a long period of uninterrupted usefulness as Cooke's "Handbook of British Fungi," published in 1871, in two volumes. Although long since out of print, the demand for it has not abated, as the high price in the second-hand catalogues fully shows. Its popularity was not due to its ever having been a satisfactory work, but to the fact that it was the only work covering the ground. The number of species included in it was 2,810, while the number now recorded for the same territory is about 4,900. There have also been great advances in the classification of the fungi in the last two decades.

In view of these facts the announcement of a new handbook like the old one, but "with all the modern improvements," gives much satisfaction. The new work is to be in three volumes, the first one being already before us. It is prepared by Mr. George Masee,¹ and in size and general appearance resembles Cooke's work.

¹MASSEE, GEORGE. — British fungus-flora: a classified text-book of mycology. 3 vols. 8vo. Vol. I. pp. xii. 422. Illustrated.

This first volume is devoted to the Basidiomycetes, beginning with the Gasteromycetes. The descriptions are accompanied with few critical notes, and no indication of geographical distribution, or relative abundance, which will somewhat curtail its usefulness to American students. The few illustrations are crudely drawn and wretchedly printed. The typography and general make up of the volume are, however, excellent.

There is much difference of opinion regarding the limitations of species and genera, especially in the Hymenomycetes, and the present work shows a number of deviations which will not be satisfactory to many. The matter can better be discussed elsewhere, however; it will suffice to note that the genus *Agaricus* is cut down until it includes only twelve species, while in Cooke's Handbook it embraced 452 species, and in Stevenson's recent Handbook of British fungi it embraces 782 species.

A botanical dictionary.

For a long time there has been much need for a revised dictionary of botanical terms. The recent rapid growth of the science and its extension into new fields has introduced many technical terms not found in former works of the kind, of which the last one issued was by Paxton and Lindley, dated 1868. The work by A. A. Crozier,¹ from the press of Henry Holt & Co., is therefore a timely publication. It defines over five thousand words, very few of which are obsolete terms. The vowel sounds and accent of the words are indicated, but the derivation is not given. Not only exclusively technical terms are given a place, which are for the most part also found in the Century dictionary, but also other words, which have beside their usual meaning a special botanical application, e. g., accessory, aggregation, entire, drooping.

It is not surprising to find that the work does not include all the terms which the reader of recent botanical writings may desire to have defined. Sometimes the word is included, but without mention of the particular specific application of it, e. g., hadrome, leptome, stereome, bulliform, as descriptive of certain peculiar structures in grass leaves. Sometimes the word is omitted entirely, e. g., aërotropism, carene, chemotactic, thermotonus. The number of omitted words, especially of those belonging to vegetable physiology, appears to be considerable, but possibly not larger than any compilation would be likely to show upon its first issue. If the book meets with the suc-

¹CROZIER, A. A.—A dictionary of botanical terms. 8vo. pp. 292. Henry Holt & Co., New York, 1892. \$2.50.

cess it deserves, it will not be long before a second edition will be required, which should also be an augmented one.

It is particularly gratifying to note that for the first time in any dictionary the much abused words "fungoid" and "fungous" are correctly defined and their proper usage indicated.

The book is admirably printed and bound, and makes a convenient reference volume.

Minor Notices.

WEST VIRGINIA has been incompletely explored, and containing a knot of mountains that is neither northern nor southern, botanists have long regarded it as very desirable territory. Even a hasty survey has yielded rich results, as Dr. Millspaugh's Preliminary Catalogue¹, now before us, will testify. It will be impossible for us to note all the interesting features of the flora. The nomenclature used is practically in accord with the Rochester rules, and several combinations appear for the first time. The catalogue includes not only all the observed existing flora, from *Clematis* to *Epicoccum*, but a supplement presents to us the rich fossil flora of the State. Quite a number of new species are described, the two plates illustrating a new moss and a new liverwort. The list contains, exclusive of the fossil flora, 1,189 species of phanerogams, 39 pteridophytes, 107 bryophytes, and 164 thallophytes, 1,499 in all; to which number may be added numerous varieties and forms. Dr. Millspaugh has been unfortunate in his state printer, a thing with which others who print without proper control of the proof can sympathize.

THE CONIFERS have long occupied the attention of the distinguished editor of the *Gardeners' Chronicle*, Dr. Maxwell T. Masters. There are now before us two reprints² containing some of the results of his labors. The Chiswick address is a very interesting presentation of this important group of plants, and its completeness may be judged from the following captions: antiquity, genealogy, stages of growth, physiology, movements, etc., practical illustrations, beauty of form and color, stature, utility, nomenclature, introduction of species into cultivation, economic value.

¹MILLSPAUGH, CHARLES F.—Flora of West Virginia. Bulletin No. 24 of W. Va. Agricultural Experiment Station, Morgantown, W. Va. 1892, pp. 314-538, with two plates.

²MASTERS, MAXWELL T.—(1) Some features of interest in the order of Conifers, being an Introductory address at the Chiswick Conifer Conference (Oct. 1891). [Reprinted from Jour. Roy. Hort. Soc. XIV, pp. 20.] (2) List of Conifers and Taxads in cultivation in the open air in Great Britain and Ireland. [Reprint, l. c., pp. 80.]

The more important "list" is introduced by an account of the literature of the group, following which the genera and species are presented alphabetically. The literature, synonymy, and native habitat are fully cited, and as most of our North American species are cultivated in the British Isles the list becomes quite a complete bibliographical index of the group for American botanists. In regard to nomenclature the author has followed the principles of Bentham and Hooker, so that the names adopted are not to be considered as representing the most recent agreement concerning nomenclature.

DIONÆA has always been a fascinating study, and although its history seemed to be fully written, Mr. Bashford Dean¹ has given us a most interesting account of its actions in its native haunts, and has supplied us with valuable information. It has always been a question whether we were getting at all the facts from the study of greenhouse specimens. Mr. Dean summarizes some of his results as follows: (1) Specialization for the capture of ground insects. (2) Marked differences in irritability in individual leaves; the usual inability of the plant to capture and retain larger and more active insects; the usual failure of the plant to capture transient insects; the repeated closings of the trap upon inorganic and vegetable objects. (3) The sensitiveness of the trap in parts other than the filaments. It would seem that the name "fly-trap" is singularly inappropriate.

THE FLORA of Lower California promises to be as prolific of new things as that of Mexico. Mr. Brandegee has already published a voluminous report of this region, and has now issued² a small pamphlet containing "additions," which were the result of a trip to the Cape region in March and April of 1892. In addition to interesting plants already described, we note four new species, three of which are *Leguminosæ* (*Dalea*, *Acacia*, and *Albizzia*). The occurrence of an *Albizzia* in our N. American flora is unexpected, as the genus was thought to be confined to warm regions of the orient.

THE FLORA OF MEXICO, owing to the persistent activity of that wonderful collector, Mr. C. G. Pringle, is being rapidly brought to our knowledge. It is also a very great advantage that so much of this rich flora is to be represented by such fine material as types. Dr. B. L. Robinson, the new Curator of the Harvard Herbarium, has been working at

¹DEAN, BASHFORD.—*Dionæa*. Its life habits under native conditions. From observations made near Wilmington, N. C. (April 1891.) [Reprinted from Trans. N. Y. Acad. Sci., 12. pp. 9.]

²BRANDEGEE, T. S.—Additions to the Flora of the Cape Region of Baja California. [Extract from Proc. Cal. Acad. Sci., II. III. 218-227.]

the Pringle collections of 1890 and 1891, and has just published¹ some of his results. Nearly forty new species are described, the majority of which are *Compositæ*. Two new genera are proposed: *Coulterophytum*, a genus of umbellifers belonging to *Selineæ*; and *Geissolepis*, a genus of composites belonging to *Galinosogeæ*. We regret the omission of the index, which always made Dr. Watson's contributions so easy to use, and a thing which Dr. Gray never would provide.

OPEN LETTERS.

The meeting at Madison in 1893.

No one need fear that there is not enthusiasm among the botanists of America. There is an unlimited supply of botanical enthusiasm in the air. The whole atmosphere is electric with it and the only problem is how to collect a little of this universal enthusiasm for the meeting at Madison. The meeting is the Leyden jar that must be charged from the general botanical atmosphere of the country. I have one practical suggestion to make and that is this: Let a plan be outlined for a complete exhibit at the Madison meeting of photographic views of the different botanical laboratories of the country. Let the gathering together of this exhibit be placed in the hands of some committee that will be willing to give some careful thought to the administrative detail of the whole matter and let it be advertised thoroughly so that the exhibit will be a complete one and a creditable one. To the "distinguished foreign guests" promised us by the GAZETTE such an exhibit would be peculiarly grateful and it would be a delicate attention on our part to present before this extracontinental contingent our material aspect together with our intellectually inspiring papers.

It is not only to the foreign botanist that such an exhibit would be valuable but particularly also to those misguided fellow-citizens in science who are unable to get beyond the notions of their childhood about botanical methods and still believe that the botanist is a man who analyses flowers and busies himself principally with the beauties and incidentally with the sterner realities of Nature. My old friends the "biologists," whom I have often had occasion to reprove more in sorrow than in anger, will be benefited, I know, by such an exhibit and it might in some degree compensate them for the absence in the future from their sectional meetings of the refining, broadening and inspiring influence of the botanists.

And even the leaders of the zoological wing might be afforded some information that would be of value to them by such an exhibit. I

¹ROBINSON, B. L. — Descriptions of new plants collected in Mexico by C. G. Pringle, in 1890 and 1891, with notes upon a few other species. [Reprinted from Proc. Am. Acad. 27. pp. 165-185.].